MXH930 PCIe 4.0 x16 SFF-8644 NTB Adapter



Features

- ✓ PCI Express 4.0 - 16.0 GT/s per lane
- ✓ Microchip PM40036 PFX PCIe 4.0 chipset
- ✓ Link compliant with PCIe 1.0, 2.0, 3.0 and 4.0
- ✓ Quad SFF-8644 connector
  PCIe 4.0 cables with CMI
- ✓ RDMA support through PIO and DMA
- ✓ Copper and fiber-optic cable support
- ✓ Full host Clock isolation support.
  Automatic support for host running CFC or SSC.
- ✓ EEPROM for custom system configuration
- ✓ Link status LEDs through face plate
- ✓ 120ns - Cut Through latency
- ✓ Port configurations: one x16, two x8 or four x4 PCIe ports
- ✓ Combine with MXS924 for larger switched topologies
- ✓ eXpressWare™ software suite license
- ✓ Low Profile PCIe form factor

The MXH930 PCIe 4.0 NTB Host Adapter is Dolphin's cost-efficient clustering product. Based on Microchip PFX Switchtec™ PCIe 4.0 switching architecture, the MXH930 host adapter includes advanced features for non-transparent bridging (NTB) and clock isolation.

For application developers, the MXH930 host adapter combines up to 256 Gb/s performance with an application-to-application latency below 500 nanoseconds. The MXH930 can be used to connect processors, GPUs, and FPGAs into an intelligent cluster that benefits from the throughput and low latency of PCIe 4.0. Using Dolphin's SmartIO technology software, GPU / CUDA applications can stream data to remote GPUs at the same speed as to local GPUs. It also supports hot-add of transparent devices to a running system.

www.dolphinics.com/products/MXH930.html

Configurations

The MXH930 can be used to create several types of PCIe networks: *

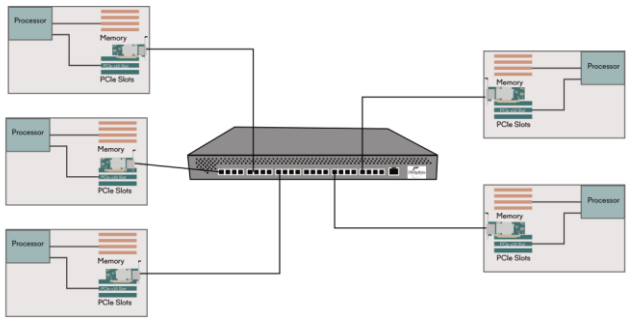
2 Node NTB network: A two-node network can be realized using 4 cables (x16). Full PCIe 4.0 x16 performance between the two systems.

3 Node NTB network: A three-node network can be realized using 2 cables (x8) between each system. Full PCIe 4.0 x8 performance between the three systems.

5 Node NTB network: A five-node network can be realized using 1 cable (x4) between each system. Full PCIe 4.0 x4 performance between the five systems.

Switched network: Larger configurations can be realized with one or more of the MXS924 24 port PCIe 4.0 switch. The MXS924 can be cascaded to expand the network.

*Consult software release notes for current status on topology and operating system support.



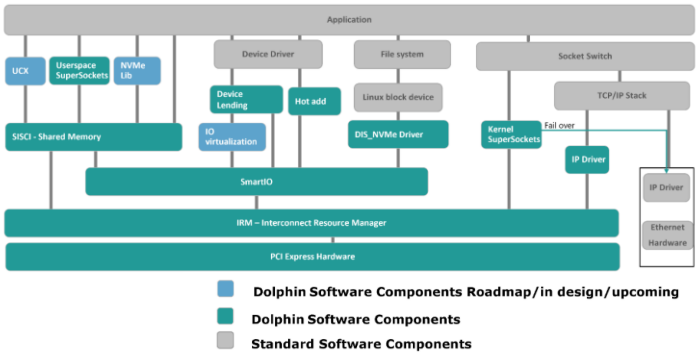
Five node MXH930 Switch cluster

eXpressWare PCIe Software

The MXH930 card comes with a full license to Dolphin's eXpressWare clustering software. This includes

- ✓ SISCI API - a robust and powerful shared memory programming environment for PCIe
- ✓ Standard TCP/IP drivers
- ✓ SuperSockets socket accelerator software
- ✓ SmartIO - access to remote PCIe devices over PCIe
- ✓ Board management software

Dolphin's software suite takes advantage of DMA and PIO data transfer schemes to effectively support both large and small data transfers. PIO transfers optimize small packet transfers at the lowest latency. DMA moves data with virtually no CPU consumption. The eXpressWare software is currently available for Linux, Windows and VxWorks. The overall software framework is designed for rapid development and deployment of inter-processor communication systems.



For more details, please visit www.dolphinics.com/software.

Specifications

Max Link Speeds	64 Gb/s per cable port, 256Gb/s in total	Operating Environment	➢ Operating Temperature: 0˚C - 55˚C (32˚F - 131˚F) ➢ AirFlow: 350 LFM ➢ Relative Humidity: 5% -95% non-condensing
Application Performance	➢ <500ns latency (application to application) ➢ Above 27 Gigabytes/s throughput	Storage Environment	➢ Storage Temperature: -40˚C - 70˚C (-40˚F - 158˚F) ➢ Relative Humidity 95% (non-condensing) at 35˚C
Active Components	Microchip Switchtec® PCIe 4.0 PFX Switch	Dolphin Software	➢ SuperSockets Berkeley Sockets API ➢ Microsoft WinSock2/LSP support ➢ IPoPCIe driver ➢ SISCI API
PCI Express	➢ Base Specification 4.0 ➢ External Cabling Specification 4.0 ➢ Card Electromechanical Specification 4.0	Usage Modes	➢ Non-transparent bridging ➢ Hot-Add Transparent
Topologies	➢ Two nodes direct cable ➢ Three to five nodes mesh topology ➢ Switched Topology with MXS924	Regulatory	➢ CE Mark ➢ FCC Class B ➢ KCC ➢ RCM ➢ UL94V-0 compliant ➢ RoHS Compliant
Cut-Through Latency	<120ns	Regulatory Approvals	➢ EN 55032:2012+A11:2020 ➢ EN 55035:2017 ➢ EN 61000-3-2:2014 ➢ EN 61000-3-3:2013 ➢ 47 CFR Part 15, Subpart B (Clause 15.107 and 15.109) in conjunction with ANSI C63.4:2014 ➢ CISPR 35:2016 Edition 1.0 (CISPR/I/412/CDV) Korean Harmonized standard, KN 35
Cable Connections	➢ SFF-8644 connector for copper / fiber cables ➢ Supports 4 - x4/ 2 - x8 or 1 - x16 connections ➢ PCIe 4.0 copper and PCIe 4.0 fiber ➢ copper - 4m (100m with fiber)	Configuration	➢ DIP-switch ➢ x4, x8, x16 link
Maximum power rating	➢ 12 Volt: max 1.66A (no port power) 2.66 A (max port power) ➢ +3.3 Volt: Not connected ➢ +3.3 Volt AUX: max 100mA	Mounting Plates	➢ Full height plate installed ➢ Half height plate included with board
Typical power rating	➢ 12 Volt: 1.5 A (no port power) ➢ +3.3 Volt: Not connected ➢ +3.3 Vaux: 100 mA	Operating Systems supported	Windows, Linux, QNX, RTX, VxWorks
Port power supply (per cable port)	➢ VPWR: 3.2V - 3.4 V, 0.86 A ➢ VMGTPWR: 3.2V - 3.4V, 89 mA	Product Codes	MXH930 - NTB Host + Dolphin eXpressWare software license
Mechanical Dimensions	Low profile, half length, 68.90 mm (2.713 inches) x 167.65 mm (6.6 inches)		

November 15th, 2026